

**The measurements of magnetic field in the solar corona
above sunspots with the radiotelescope RATAN-600**

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The method of magnetic field measurements in the solar corona above the sunspots from multifrequency observations at microwaves is analyzed and modelled. The frequency spectra of circularly polarized radiation of the sunspot associated radio sources are modelled mainly as the thermal gyroresonance emission on the first 4 harmonics of the gyrofrequency using simple models for the chromosphere-corona transition region and a dipole approximation of the magnetic field. The model calculations confirm the possibility of magnetic field measurements in the solar corona with an accuracy better than 10% polarization flux spectra at microwaves. Now such measurements are made regularly with the RATAN-600 radiotelescope from May 1999 in the frame of ground based support for the SOHO mission. Radioastronomical magnetic field strengths are compared with those at photospheric level obtained from magnetographic observations with the SOHO satellite and in some other observatories.